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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/724,615	11/28/2000	Mark A. Strobel	55270USA8A.002	8433

7590 03/14/2002

Attention: Roger R. Tamte
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EXAMINER	
JACKSON, MONIQUE R	
ART UNIT	PAPER NUMBER
1773	3

DATE MAILED: 03/14/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/724,615	Applicant(s) STROBEL ET AL.	
	Examiner Monique R Jackson	Art Unit 1773	

-- The MAILING DATE of this communication appears on the cover sh et with th correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *2* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. The abstract of the disclosure is objected because it recites at line 1, "he present invention". Correction is required

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 and 4-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Asakura et al (USPN 4,645,702.) Asakura et al teach a magnetic recording medium comprising a polymer film (*substrate*) and a metal or metal compound layer vacuum deposited on the polymer film (*metal coating*) wherein in order to improve the adhesion of the polymer film, the film may be subjected to a physical or chemical surface treatment such as a flame treatment conducted in various atmospheres wherein the gas to be utilized include those listed at Col. 9, lines 48-60, which include oxygen, nitrogen, nitrogen monoxide, nitrogen dioxide, sulfur dioxide and hydrogen sulfide with mixtures of two or more of the listed gases often especially effective (Abstract; Col. 9, lines 48-60.)

4. Claims 1, 5 and 7-8 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 10-130947 (JP'947.) JP'947 teach a polyolefin fiber (*substrate*) having excellent hydrophilic properties produced by subjecting the surface of the polyolefin fibers to an oxidation treatment such as a flame method utilizing at least one type of gas selected from the group consisting of air, oxygen, carbon monoxide, carbon dioxide, He, Ar, sulfur oxides, and nitrogen oxides, to

form oxygen containing functional radicals, including those as instantly claimed, on the surface of the polymer fibers (Claims 2-3, Paragraph 0013, Examples.) JP'047 also teach that the surface of the polymer fibers may be coated (*treated*) in advance of the above oxidation treatment with hydrophilic materials such as sulfonic acid compounds to improve the hydrophilic properties of the fibers (Paragraph 0014-0015.)

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 2-3 and 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asakura et al in view of the admitted prior art. The teachings of Asakura et al are discussed above. Asakura et al do not teach whether the flame treatment process is conducted in a fuel-rich environment or a fuel-lean environment, however, it is well known in the art that flame treatment can be conducted at ratios above, equal to, or below the stoichiometric ratio of oxidizer to fuel, wherein in a fuel-rich system the equivalence ratio (stoichiometric ratio/actual ratio) is greater than one, and in a fuel-lean system the equivalence ratio is less than one, as taught by the admitted prior art (Page 1, line 19 – Page 2, line 6.) Given that the ratio of oxidizer to fuel is a known result-effective variable affecting the functional groups produced on the surface of the polymer film, it would have been obvious to one having ordinary skill in the art at the time of the invention to utilize routine experimentation to determine the optimum ratio of oxidizer to fuel to utilize in the invention taught by Asakura et al to provide the desired functional groups on the

surface of the polymer film for the desired adhesion-promoting affect wherein the materials disclosed by Asakura et al, such as hydrogen sulfide and nitrogen, would produce the functional groups instantly claimed based on the ratio utilized for a particular end use.

7. Claims 1-12 are rejected under rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art in view of Asakura et al. The admitted prior art teaches a method of modifying a polymeric substrate by exposing the polymeric substrate to a flame where the flame is supported by an oxidizer and fuel mixture that may be fuel-rich or fuel-lean to improve the wettability (hydrophilicity) of the polymeric surface and in turn, the adhesion of a metal coating to the polymeric substrate, with fuels for the flame process including mixtures of carbon dioxide, carbon monoxide, hydrogen, methane, and nitrogen (Page 1, line 9-Page 2, line 12.) The admitted prior art does not teach the use of sulfur-containing compounds for the flame treatment process, however, Asakura et al teach that sulfur dioxide and hydrogen sulfide (as instant claimed) are effective equivalent gases to carbon dioxide, carbon monoxide, hydrogen, and nitrogen, with mixtures of two or more often especially effective, in improving the adhesion and bondability of polymer films (Col. 9, lines 48-60.) Hence, it would have been obvious to one having ordinary skill in the art at the time of the invention to utilize hydrogen sulfide, a known functional equivalent as taught by Asakura et al and would produce the functional groups as instantly claimed, in the flame treatment process taught by the admitted prior art wherein it would have been obvious to one having ordinary skill in the art to utilize routine experimentation to determine the optimum ratio of the oxidizer and fuel mixture to provide the desired functional groups or adhesion promoting affect for a particular end use.

8. Claims 2-3 are rejected under rejected under 35 U.S.C. 103(a) as being unpatentable over JP'947. The teachings of JP'947 are discussed above. JP'947 does not teach whether the flame treatment process is conducted in a fuel-rich environment or a fuel-lean environment, however, the ratio between the fuel and oxidizer is a known result effective variable affecting the functional radical groups produced on the surface of the polymer, and hence, it would have been obvious to one having ordinary skill in the art at the time of the invention to utilize routine experimentation to determine the optimum ratio of oxidizer and fuel to utilize in the invention taught by JP'947 based on the desired hydrophilic properties for a particular end use.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monique R Jackson whose telephone number is 703-308-0428. The examiner can normally be reached on Mondays-Thursdays, 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul J Thibodeau can be reached on 703-308-2367. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

mrj
March 10, 2002

Paul Thibodeau
Supervisory Patent Examiner
Technology Center 1700